

Recent results and new perspectives in historical climatology: An overview

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This issue of the *Past Global Changes Magazine* presents the state of research in the field of historical climatology. Its articles examine different regions of the world and review innovative methodological approaches, recent scientific results, and analyses of new source materials.

Historical climatology applies the methods and insights of historical and climate science to human records, or the archives of societies. Weather descriptions and climate proxies found in these sources, such as data on plant or ice phenology, enable the reconstruction of past climates and weather as well as their historical societal impacts.

A strength of historical climatology is the recovery of precisely located and dated information on climate and weather before the modern instrumental record. In parts of China, this information extends back more than a millennium, while in Europe evidence becomes abundant from the Late Middle Ages onwards (since ca. 1400 CE). Historical climatology research also benefits from collaboration with paleoclimatologists and climate modelers.

This issue was created in connection with the PAGES working group Climate Reconstruction and Impacts from the Archives of Societies (CRIAS; pastglobalchanges.org/crias), which started its activities in 2018. CRIAS aims to develop

best practices, international collaboration, and methodological innovation in the reconstruction of historical weather and climate and their societal impacts. To this purpose, CRIAS provides a hub for researchers from different continents and different disciplines to exchange perspectives, methods, and data.

This issue opens with a selection of articles presenting research results from recent years for different world regions. Kiss et al. (p. 36) examine Southern, Central, and Eastern Europe, while Camenisch et al. (p. 38) examine recent research in Northern and Western Europe, both focusing on climate reconstruction. Williamson and Pei (p. 40) present the rich historical climatology source materials of East and Southeast Asia, as well as typical methods for their analysis. Nash and Hannaford (p. 42) provide an overview of historical climatology on the African continent.

In the second part of this issue, we present methodological considerations, innovative results, and promising new source materials. White and Pei (p. 44) discuss the integration of quantitative and qualitative perspectives when assessing the impacts of past climates and extreme events on societies. Brown et al. (p. 46) demonstrate what traditional field names in England can tell us about the history of the environment and especially the history of flooding. Jusupović

and Bauch (p. 48) deal with the potential of ancient Russian sources for historical climatology. Huhtamaa et al. (p. 50) discuss the combination of tithe and tree-ring data in Scandinavia, and Ouellet-Bernier and de Vernal (p. 52) present a climate reconstruction for the Labrador region of Canada from the 18th to mid-20th centuries. Two papers deal with fantastic and rich historical sources from Arab regions. The first by Meklach (p. 54) focuses on the Maghreb, and the second by Ott (p. 56) on the Middle East during the Mamluk era. Finally, Burgdorf (p. 58) presents a comprehensive database project on early instrumental measurements.

The range of perspectives and results in this issue demonstrate the importance of the archives of societies and analysis of these documents by historical climatologists for an interdisciplinary understanding of past global changes and their human dimensions.

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Figure 1: Ancient Observatory (古觀象臺) in Beijing, China. (Photo credit: Q. Pei.)